

US EPA ARCHIVE DOCUMENT

Exhibit 1. Revised Cost Effectiveness Analysis for Carbon Capture and Storage

Revised Cost Effectiveness Analysis

Cost Item	Celanese	Revision
CAPITAL (\$)		
Amine Treating System/Compression	95,313,792	67,777,644
Plant Electrical Upgrades	6,000,000	0
Boiler for Amine Regeneration	19,000,000	0
Offsets	5,000,000	0
Total Capital Amine/Compression	125,313,792	67,777,644
Annual Capital Amine/Compression	4,166,667	2,253,598
Annual Capital Pipeline	566,924	283,462
Annual Capital Geologic Storage	362,011	362,011
O&M (\$/yr)		
Boiler natural gas	16,575,000	0
MEA/Compression Electricity Cost	3,581,526	2,148,916
Boiler Electrical Cost	358,474	0
Labor Capture & Compression	1,000,000	1,000,000
Maintenance, property tax, insurance	3,720,000	2,168,885
Pipeline	215,800	108,000
Storage	3,825,511	3,825,511
Total Annual Costs (\$/yr)	34,371,913	12,150,382
CO2 Emissions Removed (ton/yr)	479,372	479,372
Cost Effectiveness (\$/ton)	72	25

INPUTS

Electricity (\$/MW-hr)	50	30		
Natural Gas (\$/MMBtu)	5			
CRF	0.03324987	0.033249868	17,000,000	565247.75
Maintenance, Property, Taxes, Insurance	0.032	0.032		
Electricity Demand (MW)	8.177	8.177		

Celanese costs based on Rev. Ap., pp. 3-16 and 3-17; Appx. A, Worley Parsons analysis.

Revised Cost of MEA and Compression

	Worley Parsons Analysis				Revised Analysis			
	MEA		Compression		MEA		Compression	
Equipment	22,798,300		10,629,763		22,798,300		10,629,763	
Material	10,262,682		3,710,253		10,262,682		3,710,253	
Labor	20,525,368		7,420,505		9,122,400		3,298,000	
Manhours	228,060	90	82,450	90	228,060	40	82,450	40
Bare Erect	53,586,350		21,760,521		42,183,382		17,638,016	
Eng CM HO & Fee	5,358,635	10	2,176,052	10	4,218,338	10%	1,763,802	10%
Contingencies	8,841,748	16.5	3,590,486	16.5	1,392,052	3%	582,055	3%
TOTAL	67,786,733		27,527,059		47,793,772		19,983,872	
			95,313,792				67,777,644	